KIX Seminar 3

Theme: Developing and implementing appropriate feedback mechanisms for schools following data analysis and reporting requirement

Confronting the Data Challenge: Strengthening Our Systems for Innovative Data Usage and Management
Recap of Learning Journey on LAS & EMIS

- Approach to learning: a workspace and community of practice
- Review of effective LAS and EMIS: best practices
- Promising practices of integrating databases, hosting, security and privacy issues
- Reviewing Learning Assessment trends and challenges
- Group Work on how to formulate a LAS objective, whether to use an existing test or develop a new one and how does it inform policy on school reform in terms improving quality, equity, accountability of the system
- Case Study of International Comparison of Numeracy (ICAN)
- Community of Practice Engagement Poll
Seminar Structure:

- How Schools perceive the use of national assessment data - a case study of South Africa
- Feedback from different types of Learning Assessment Surveys
- Effective School Feedback mechanisms - Group WORK (35 mins)
- Presentation of case study UWEZO
- Database Integration Toolbox
- Evaluation of Seminar
- Next Steps
A case of national assessment feedback to Schools in South Africa

- In latest assessment of 6 million primary school learners, Grade 3 learners achieved an average of only 35% for literacy and 28% for numeracy, while Grade 6 learners managed 28% for languages and 30% for mathematics (DBE, 2013).
- 2011 PIRLS test, 43% of South African learners were not able to reach the low international benchmark (Howie, et al., 2012) in literacy
- SACQMEC III (2011) focussed on education inequality, and noted that the poorest 20% of learners in South Africa perform far worse than their peers in other African countries; 14th /15 on reading and 12th place numeracy
- TIMMS 75% of South African learners had not acquired the minimum set of mathematical or science skills by Grade 9 but pass rate of 70% for grade 12
- Equity/Quality is not a simple input-output model - converge and diverge
- Enabling infrastructure and minimum norms and standards for schools.
A case of national assessment feedback to Schools in South Africa

- In 2011 SA introduced Annual National Assessment (ANA) because despite larger investments than neighbouring countries lower learning outcomes
- It has two-tiered system for testing grade specific language and mathematics for grades 1-6 and 9
  - census-based and external sample for verification of results
- Tests are marked by schools, moderated by the province. Each district produces a district wide report and inform schools how well they are performing in relation to other schools in the district, province and country
- An Action Plan requires districts to promote improvements in all schools, in particular poorly performing schools ensuring sufficient teachers and materials
Teacher Responses (Study by Kanjee, 2012)

- "The ANA results to me serve as a measuring stick in my classroom. It will assist me to identify my teaching methods and techniques whether it suits my learners understanding."

- "The results show which topics learners perform bad on, then I will emphasise those topics and [in] the ones in which they did well I will teach only for short time."

- "The school analysed the results and took a decision to do tasks for this term based on the questions that were badly answered."

- Our teachers are paying more attention to the school concert than to the ANAs. Why? Because we can't understand how our neighbouring schools, who have the same learner profiles and numbers, and the same challenges and problems as us, [...] keep getting high ANA scores, in the 60s and 70s. Now how is this possible? Our teachers are clear that we will not cheat, but they also know, no matter what they do, anything that is done honestly, we will still remain an underperforming school. So what's the use?"
Teacher Views on value of national Assessment findings in South Africa

Teachers strongly Agreed or agreed that

- 93% - Testing all learners in all grades will provide useful information to our school
- 92% - Information from the ANA tests can help teacher improve learning
- 59% - Teachers do not know how to use ANA results to assist learners
- 85% in quintile 2, quintile 1 being the poorest socio-economic level)
- 35% - The District Regional Office provides/guidance/training on the use of ANA results
- 13% - The ANA tests are a waste of time and money
Constraints to Teachers use of assessment data

● **The irrelevance of data** derived from these tests is a demotivating factor that discourages teachers from trusting the validity of the data;
● **Timing** - when data was made available at a time that teachers did not need it, teachers were less likely to use it;
● **Lack of clarity** - data is often reported in formats that are either not familiar to teachers or are perceived to be irrelevant to what happens in the classroom;
● **Lack of skills** - teachers often lack the relevant skills to analyse the data; and
● **Absence of strong leadership and support from school district personnel** in terms of promoting a culture of evidence-based decision-making inhibits the potential of teachers to use data; where district staff provided good role models of data use, teachers grew to respect and value the importance of data
The optimal use of Learning Assessment Feedback to Schools

● For schools/teachers to use data efficiently, effectively and successfully in their teaching, they will need support at every step of the way
● A pervasive culture of data utilisation (and usability of data) has taken root in the education system
● High quality feedback is specific and on-going. Feedback needs to be:
  ● Timely - When delivered in a timely manner, Hattie’s research shows feedback has an effect size of 1.13 on learning achievement
  ● Clear - understood by different audiences
  ● Focused on improvement strategies - key performance indicators are monitored from national, provincial and district and school level action/improvement plans
Feedback Approaches for LAS

1. Periodic sample based assessments
   - Each assessment framework should specify the feedback process
   - Such assessments are resource intensive and may be limited by timing
   - As a sample, individual results are not provided
   - The feedback targets the decision makers. Such feedback will be less helpful to the schools.
   - The purpose of the assessment will determine the timing of the assessment results. Such feedback is usually unpopular among those who did not participate in the assessment.
   - MoEs can benefit from partnerships (open up co-creation with other stakeholders to participate in the assessment)

1. Full Cohort Assessments
   - These are the most common assessments, they are resource and time intensive yet they elicit the most interest
   - They provide opportunity for each unit (school) to participate in the assessment
   - They elicit interest across board making them high stakes
   - Often the results are misused as demand for ranks increase. Overzealous officials and anxious publics may use them to demand for accountability (this may spiral out of control)
Feedback Approaches for LAS.

School Based Assessments using Test Item Banks.

This approach recognises that teachers face the time and skill gap in developing and using LAS results.

An item bank is a repository of item bank that belong to a testing program. The bank contains information pertaining to the tests. Unlike in sample based and full cohort assessments, teachers are a liberty to choose the items to assess their learners, (number of items, type of questions and what questions to choose). The item bank will contain:

- Item author
- Date written
- Item status (e.g., new, pilot, active, retired)
- Angoff ratings
- Correct answer
- Item format
- Classical test theory statistics
- Item response theory statistics
- Linkage to test blueprint
- Item history (e.g., usage date(s) and reviews)
- User-defined fields

Use of item bank softwares has been embraced. Check the sample below (https://www.youtube.com/watch?v=s0-i-N6HGXc)
Group Work - Each Group will be asked 3 questions.

1. Who receives formal feedback from national learning assessments in your Ministry and in what form?  **Group 1:**
2. What challenges are faced by users in using the information? **Group 2:**
3. What possible support by EMIS can be proposed to ensure better use of the data at school level? **Group 3:**

We will use Jamboard - an interactive smartboard to engage participants and facilitate discussions.

Please put this address in your browser to join:

**Group 1:**
https://jamboard.google.com/d/1Plgt3ls8yBmA85d60_mGvpVlZTv_TBGBqbwX6xtm0Bs/viewer

**Group 2:**
https://jamboard.google.com/d/1sAd60bX8aE-tcgNb1ajXZcTGQQ__SQqKdKIAH4sIRa8/viewer

**Group 3:**
https://jamboard.google.com/d/1E6jjxvpwWZlpGqzKAXzdfcGGVc-QaVukOnbuwcMZhXY/viewer?f=0
## How to use Jamboard

### GROUP ONE - Who receives formal feedback from national learning assessments in your Ministry and in what form?

<table>
<thead>
<tr>
<th>Offices</th>
<th>District/Provincial</th>
<th>Schools</th>
<th>Teachers</th>
</tr>
</thead>
</table>

- Inservice, Teacher Training Colleges, Curriculum Institute.
Group Work Reporting

Each Group will report back on these topics

1. Who receives formal feedback from national learning assessments in your Ministry and in what form?

1. What challenges are faced by users in using the information?

1. What possible support by EMIS can be proposed to ensure better use of the data at school level?
Sample tool – Uwezo literacy

Reading Test (1)

2015

Letters / Letter sounds

Words

<table>
<thead>
<tr>
<th>p</th>
<th>r</th>
<th>buy</th>
<th>look</th>
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<td>f</td>
<td>u</td>
<td>test</td>
<td>sing</td>
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<td>teach</td>
<td>like</td>
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</tbody>
</table>

Paragraph 1
Mary has a very big garden. Her friend gave it to her. She has grown flowers on it. The flowers look good.

Paragraph 2
John is not feeling well. He will miss school today. His father gave him medicine. He will get well soon.

Story
Martin had seven white chicks. An eagle ate five of the chicks. Martin was very angry. He wanted to trap the eagle. He did not know how to trap it. His friend Tom suggested they could use a rat.

The boys went to look for a rat. They saw one entering a hole. They dug deep into the hole. A big snake came out of the hole. The boys ran away screaming loudly. They did not trap the eagle.

1. Why was Martin angry?
2. Why were the boys digging into the hole?
Case study: UWEZO EA feedback framework

- Instant feedback, then report in 100 days
- Collaborative spirit and Building partnerships
- Multi-layered- National - sub-national and community level. District-level analysis and ranking
- **District ranking:** District score-cards and ranking sheets at school
- **National HT associations:** Kenya Primary School Heads Association (KEPSHA) meeting
- **Local champions:** Uwezo champions community engagement by volunteers
- **Policy planning:** Timed to provide input into the annual planning and budgeting process.
UWEZO feedback case study

- Uwezo dissemination happens at 3 levels

**Community & school**
- Household
- School level

**District launch**
District-level education officials, unions, CSOs and HTs.

**National Launch**
One big national launch
KEPSHA

**Communications**: Generating evidence alone is not enough. Share information in a manner that better informs the public, stimulates nation-wide citizen debate and creates pressure for policy change from the bottom-up.
Principles of LAS data feedback

- Relevance and ‘fit-for-purpose’
- Currency of information is key
- Collaborative spirit
- Must be multi-layered, multi-targeted and multi-facetted
- Multi-platform
- Simplicity and resonance
- Must allow for comparisons
- Be purposeful but also opportunistic
Education Odoo - “Out of the Box” LAS Feedback

School & College Mgt. System

- Mobile App
- Training & Placement
- Library
- HR & Payroll
- Feedback
- Time Table & Attendance
- Hostel & Transport
- Grievance
Odoo School and Education Software ERP

- Easily Manages Attendance
- Takes Care of Student Grades
- Produces News Updates and Reminders
- Manages Teacher Profiles with Important Details
- Manages Parents Profiles
- Easily Prints Student Identity Cards
- Builds Courses Easily
- Logins for Student, Parent Teacher etc
- etc
Free Data Warehouse : Education Odoo

- Education Odoo data warehouse - free to community with dashboards
- Odoo is the acronym of On-Demand Open Object. -Brussels
- Odoo is a Free open source Enterprise Resource Planning for Education Accounting.CRM. eCommerce. POS. HR, Timesheets. Reporting.
- 1000’s of integrated apps & 12 new apps released every day,
- Odoo Human Resources, Timesheet, Leaves, Recruitment, Appraisal ..
- Education Odoo data warehouse - free to community with dashboards
- Supported by international community of tens of thousands of developers and millions of users.
- Used by Ministry of Education, Portugal, etc and all French universities as education courseware, schools and Toyota
- Highly flexible and modular used in schools up to sector wide
Innovative Database Management: WHY a new Approach?

- EMIS Digital Divide growing exponentially across countries, mobiles.
- Sustainable database management and consolidation. Complex, updates
- New open source solutions provide stepping stone to build a data warehouse in the cloud for fragmented EMIS/LAS
- Upskills technical capacity of relatively underskilled IT technicians, developers, programmers, administrators
- Gives a leg up to staff to join the international MIS community of practice in database management and reporting dashboards
- Comes with best practices in cyber security - eg supply chain management
- More secure using open source with caretaker provider support
- Grows the independence from external consultants/service providers
Innovative Database Management : Synology

- Turnkey Platform - Open Source with free support by Synology
- Free with hardware platform except with
- Mail server @$50 once off & +1 virtual @$250. 5 years warranty
- First Onsite cloud / then offsite cloud - combination of the two
- Easy to use and understand by non programmers - deploy pre-configured templates, minimal training
- Comprehensive - allows < 15 databases operational concurrently - hardware
- < 1000’s concurrent sessions - dependent on Hardware
- Manages supply chain risk eg. updates
Dear user,

Welcome to the new KIX Community of Practice hosted by African Union Pan African Institute for Education Development (IPED) workspace au-iped! Browse to to [http://QuickConnect.to/au-iped](http://QuickConnect.to/au-iped) to access the system. Please download Synology desktop [https://www.synology.com/en-globalsupport/download/VirtualDSM#utilities](https://www.synology.com/en-globalsupport/download/VirtualDSM#utilities) & mobile apps from Play/App store.

If you cannot connect to the server, please contact the administrator. georgebester@program4results.com

Your username: [REDACTED]
Your password: [REDACTED]

In the demo stages this password will not change.

You will be admitted to the Platform as an Administrator. Please don’t delete any services/packages for other users.

Please do not enter any private information into the system.

The Snapshot will be reset from time to time.

Should you need a snapshot reset please send an email.

In this trial stage please consider all work temporary as a reset will restore the complete platform to its default settings.

From au-iped Georgebester@program4results.com
AU-IPED
Virtual Machine Manager

<table>
<thead>
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<th>Status</th>
<th>Running Host</th>
<th>IP</th>
<th>Host CPU</th>
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<td>GEBASUSVM</td>
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<td>192.254.133.227, 192.168.1.99</td>
<td>6.8 %</td>
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</table>

**General**
- **Name**: android
- **CPU Cores**: 2
- **CPU Compatibility Mode**: Disabled
- **Reserved CPU Threads**: 0
- **CPU Relative Weight**: Normal
- **Memory**: 2 GB
- **BIOS**: Legacy BIOS

**Host CPU**
- 0 %

**Host Memory**
- 0 MB / 0 GB
Download Docker Containers
Docker Containers

Integrate as a Service (TIBCO) or Self-Host as Gobblin
Open Source Database Integration Tool Box
Self Hosted Apache Gobblin - Paypal

Apache Gobblin: Simplifying Data Integration

Open source @ https://gobblin.apache.org/
Stream + Batch
Adopted by LinkedIn, Intel, PayPal, Apple, IBM, Swisscom, Prezi, AppLift, NerdWallet and many more…

Hundreds of TB per day
Thousands of datasets
~30 different source systems
80%+ of data ingest
Seminar Evaluation

Go to www.menti.com and use code 67703371
- To what extent did this seminar meet your expectations?
- How effective did you find the break-out session?

Go to www.menti.com and use code 13147417
- How many of these seminars did you attend?
- On a scale of 1-5 how applicable are they to your work?

Go to www.menti.com and use code 23342055
- What was the most interesting across the 3 seminars?
- Any additional comments?
Next steps........

- Continue to stimulate a EMIS community of practice and support managed by the AU IPED
- Develop an action plan to support Member States implement based on the AU EMIS Norms and Standards Assessment Framework (endorsed by Ministers in SADC, EAC, ECOWAS)
- Workshop on accessing Community of Practice Platform and Database integration technical support.
  - Workshop tomorrow at 3pm Johannesburg time
  - Register with Georgebester@program4Results
The Program 4 Results Team

George Bester  
Bcom Mba  
Education Finance and IT Specialist

Amos Kaburu - LAS Specialist, PAL Network

Angela Arnott - M. Ed.  
EMIS Specialist, GESCI and EMIS experience

Sam Otieno  
- MERL Specialist; GESCI, LAS experience
For Help Desk contact

george.bester@program4results.com
angela.arnott@program4results.com
sam.otieno@program4results.com
amos.kaburu@program4results.com
ria.vdmerve@program4result.com